(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization

International Bureau





(43) International Publication Date 7 July 2005 (07.07.2005)

(10) International Publication Number WO 2005/062342 A2

(51) International Patent Classification7:

H01J 61/00

(21) International Application Number:

PCT/JP2004/019484

(22) International Filing Date:

20 December 2004 (20.12.2004)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

2003-424170

22 December 2003 (22.12.2003) JP

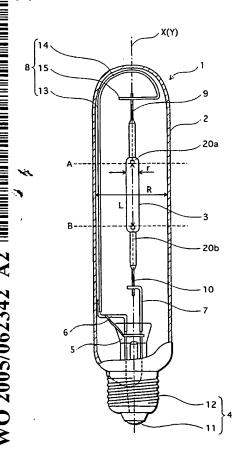
(71) Applicant (for all designated States except US): MAT-SUSHITA ELECTRIC INDUSTRIAL CO., LTD. [JP/JP]; 1006, Oaza Kadoma, Kadoma-shi, Osaka 5718501 (JP).

(72) Inventors; and

- (75) Inventors/Applicants (for US only): KANAZAWA, Yukiya. UTSUBO, Atsushi. NOHARA, Hiroshi. KAK-ISAKA, Shunsuke. NISHIURA, Yoshiharu.
- (74) Agents: NAKAJIMA, Shiro et al.; 6F, Yodogawa 5-Bankan. 2-1, Toyosaki 3-chome, Kita-ku, Osaka-shi, Osaka 5310072 (JP).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO. NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH,

[Continued on next page]

(54) Title: METAL HALIDE LAMP AND LUMINAIRE USING THE SAME



(57) Abstract: The present invention aims at providing a metal halide lamp that (i) prevents a decline in the lumen maintenance and a deterioration of quality in appearance due to the coloring of a casing tube surrounding the arc tube, and at the same time (ii) achieves high luminous efficiency. A metal halide lamp 1 has a pair of electrodes 20a&b placed in an arc tube 3 made of translucent ceramic, and a sodium halide is enclosed therein. The metal halide lamp 1 satisfies L/D 4, where L (mm) is the length of the space between the electrodes 20a&b and D (mm) is the internal diameter of the arc tube 3. The metal halide lamp 1 has a casing tube 2 surrounding the arc tube 3, at least around a portion between the electrodes 20a&b. Here, R/r 3.0 is satisfied, where R is the internal diameter of the casing tube 2 and r is the external diameter of the arc tube 3, within a region positionally corresponding to, in a radial direction of the arc tube, the space between the electrodes 20a&b, on a cross-sectional surface where an outer circumference of the arc tube 3 comes closest to the internal circumference of the casing tube 2.



GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

 without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.